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NASA SATELLITE TO TRACK NORTH POLE EXPEDITION

A NASA meteorological research satellite -- Nimbus-6 -- will track the 6,000-kilometer (3,728-mile) journey of a lone Japanese explorer venturing by dog sled from northern Canada to the North Pole and return, traveling the length of Greenland's isolated interior. The six-month journey is scheduled to start March 4, 1978.

NASA's Goddard Space Flight Center, Greenbelt, Md., is undertaking the tracking task at the request of the Smithsonian Institution which has a scientific stake in the venture.

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The explorer is 37-year-old Naomi Uemura of Tokyo whose Arctic experience includes driving a dog sled solo some 12,000 km (7,457 mi.) from Greenland to Alaska in 1975 and 1976 over an 18-month period. In preparation for that trip, he had lived for a year in a Greenland Eskimo community to learn dog handling techniques and how to survive the hostile Arctic.

Uemura is also an accomplished mountain climber, having conquered the highest peaks in five continents. He scaled them all alone with the exception of Mt. Everest, which he successfully climbed as part of a team escort. He has also sailed alone on a raft 6,000 km (3,728 mi.) down the Amazon River.

During his upcoming Arctic journey, Uemura will carry a 4.5-kilogram (10-pound) satellite beacon package on his dog sled. This battery-powered unit will transmit a radio signal automatically once a minute. Included in the signal will be the local temperature and atmospheric pressure.

The radioed signals will be monitored by the Nimbus-6 satellite which overflies the poles once every 108 minutes at an altitude of 965 km (600 mi.). Data collected by the satellite will be relayed by a NASA tracking station in Fairbanks, Alaska, to Goddard Center.

There, the position of the dog sled will be computed automatically. All data will be available to the Smithsonian at least once every 12 hours.

Uemura will take systematic snow, ice and air samples for Japan's National Institute of Polar Research and the Water Research Institute of the Nagoya University, Japan. He also will record possible evidence of past habitation in northern Greenland.

"We are particularly anxious to have as accurate a record as possible of Uemura's daily positions for correlation with the collected data," said Dr. Lee Houchins, the Smithsonian's principal investigator from the Museum of History and Technology.

"The satellite tracking data will be of further value to us in evaluating Uemura's dead reckoning and celestial navigation techniques, a particularly difficult task in the polar regions," added Dr. Houchins.

Uemura will depart for the North Pole from a camp near Alert on Cape Columbia, Ellesmere Island, in Canada's remote Northwest Territories. Following Admiral Peary's 1909 route, he expects to reach the Pole by mid-April after travelling 800 km (497 mi.).

From the North Pole, the Japanese explorer will strike out for the northern tip of Greenland, with hopes of arriving there by June 1. This portion of the journey will equal the first leg in distance.

Using mountain climbing techniques, Uemura will work his way to the top of the Greenland ice plateau which towers approximately 3,000 meters (9,843 feet) above sea level. He will then traverse the 2,700-km (1,678-mi.) length of Greenland, at times using ice sailing techniques to relieve the sled dogs of some of their burden. He expects to arrive at Narssarssauq on the southern tip of Greenland by the end of August.

The straight line distance of Uemura's planned journey is 4,300 km (2,672 mi.). His actual surface distance is expected to be more like 6,000 km (3,728 mi.) due to the many lateral trips around ice pressure ridges and stretches of open water encountered during the trek.

The Japanese explorer made his decision to attempt the polar expedition only after he observed the Arctic Ocean ice and Greenland's inland ice sheet twice by air. As part of this preparatory effort, he flew over the area where he expects to mount the Greenland plateau.

While enroute to the North Pole and then to Greenland, Uemura will maintain radio contact with his base camp near Cape Columbia. By the time he reaches Greenland, his communications center will be shifted to Dundas on Greenland's west coast near Thule. Another communications camp is planned for operations at Sondre Stromfjord, south of Thule on the west coast.

Supplies for the explorer will be replenished by air-drops or landing rendezvous as needed during the journey.

NASA's role in the expedition is limited to providing tracking and data relay services to the Smithsonian. As a special feature, however, the beacon unit on Uemura's dog sled is equipped with a special switch to indicate emergency as a back-up to his voice communications system.

Costs of the venture to NASA are minimal. Both the Nimbus-6 and its ground control computer routinely operate on a 24-hour basis. They acquire data from some 130 buoys, icebergs and other platforms deployed around the world for environmental research.

The satellite beacon unit was acquired at no cost to NASA by Uemura's backers -- The Mainichi Newspapers and the Bungei Shunju Publishing Co., both of Tokyo, Japan. This unit and its batteries were cold-tested at temperatures of minus 50 degrees Celsius.

The batteries used with the satellite beacon are Lithium Thionyl Chloride packs, developed by the Communications Systems Division of GTE Sylvania, Inc., a subsidiary of General Telephone and Electronics Corp., Needham, Mass.

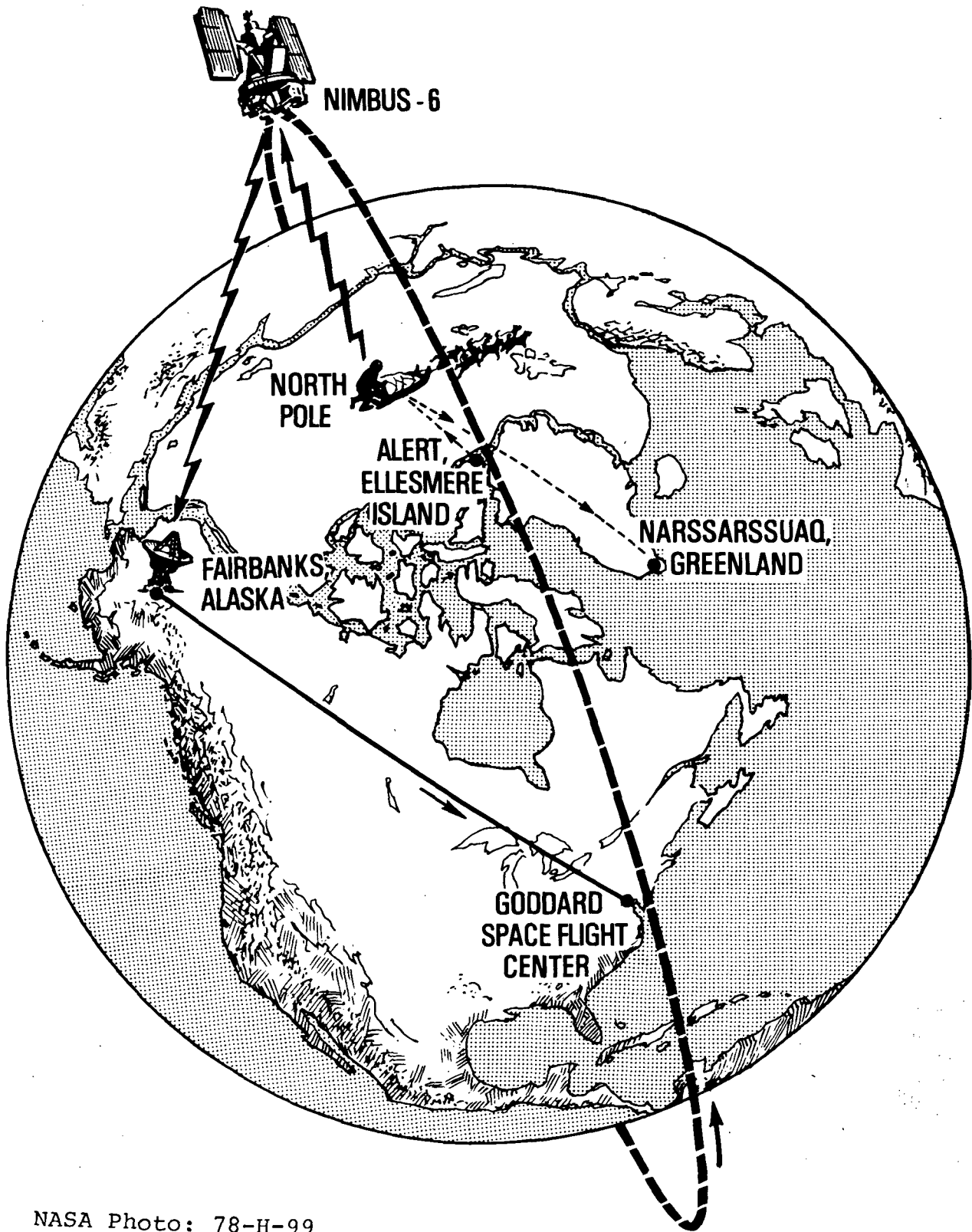
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